DOCUMENT RESUME

ED 404 204 SO 024 399

AUTHOR Carneiro, Roberto
TITLE The Evolutionary Dynamics of Education Systems: Exposition on Institutional Development. International Commission on Education for the Twenty-First Century, Second Session (Dakar, Senegal, September 18-22, 1993).
INSTITUTION International Commission on Education for the Twenty-First Century (UNESCO), Paris (France).
REPORT NO EDC-93/CONF-002/INF3-2B; EDC/II/3 Rev
PUB DATE Dec 94
NOTE 29p.; For related papers, see SO 024 394-407 and SO 024 448-454.
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Educational Administration; *Educational Change; Educational Development; *Educational History; Educational Research; Elementary Secondary Education; Foreign Countries; Higher Education; *Organizational Development; Student Role; Teacher Role

ABSTRACT

This paper analyzes the stages of educational development beginning in the 1950s and 1960s, when mass economies began to emerge, immediately after World War II. This essay covers the last 40 years that have been characterized by rapid change and the most fascinating acceleration in the history of humanity. During those four decades, education systems were forced, by ever-changing paradigms, to keep pace with the surrounding world, shaking off their proverbial inertia, opening up to the contradictory forces of surrounding societies, and breaking out of their ivory towers in order to become more interactive. The paper includes a synoptic table attempting to give an overall view of the main stages of development of education systems during this period of intense reform. The four stages defined in the table are analytical abstractions and do not occur as neatly as presented. Rather, two or more stages always overlap symbiotically, creating hybrid situations which must be carefully studied case by case. Each stage of the educational cycle contains certain institutional chromosomes, indicative of an evolutionary continuum built on the achievements of earlier stages. These stages, like history, are characterized by continuous change, except for those specific moments when societies are disrupted by sudden breaks. The four stages represented are: (1) production oriented; (2) consumption oriented; (3) client oriented; and (4) innovation oriented. Each generation is described by driving forces, main features, and dominant role, that highlights the most productive exogenous and endogenous factors in the dynamics of change and in relation to the strategic position adopted by the administration. (DK)

EDC/II/3 REV.
DECEMBER 1994

ED 404 204

Commission internationale sur l'éducation pour le vingt et unième siècle

International Commission on Education for the Twenty-first Century

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
F ZANOTTINI

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

THE EVOLUTIONARY DYNAMICS OF EDUCATION SYSTEMS: EXPOSITION ON INSTITUTIONAL DEVELOPMENT

BY

ROBERTO CARNEIRO
PRESIDENT, TELEVISÃO INDEPENDENTE
LISBON

SP 024 399

UNESCO, Paris

BEST COPY AVAILABLE

• **Président/*Chairman***: Jacques DELORS • **Membres/*Members***: Isao AMAGI, Roberto CARNEIRO, Fay CHUNG, Bronislaw GEREMEK, William GORHAM, Aleksandra KORNHAUSER, Michael MANLEY, In'am MUFTI, Marisela PADRÓN Quero, Marie-Angélique SAVANÉ, Karan SINGH, Rodolfo STAVENHAGEN, Myong Won SUHR, ZHOU Nanzhao

Distribution: Limited

EDC.93/CONF.002/INF3.2B
September 1993

UNESCO

**International Commission on Education
for the Twenty-first Century**

**Second Session
18-22 September 1993
Dakar, Senegal**

THE EVOLUTIONARY DYNAMICS OF EDUCATION SYSTEMS

Exposition on institutional development

Roberto Carneiro

Background

1. It is common knowledge that social macrosystems can be studied as living things because they tend to develop along certain general lines that can be determined objectively by means of comparative analysis.

Philosophers, historians, social scientists and political analysts have therefore, through the ages, made many attempts and propounded brilliant theories to gain an insight into the life cycles of these systems and predict every detail of their behaviour.

Many of these analyses have made history and are still a source of inspiration to scholars.

Others were misinterpreted and rash generalizations were made about their respective fields of application; some were even used to support unilinear and simplistic forecasts of the future and of societal development.

Indeed, the passion for scrutinizing the destiny of peoples and moulding it to some human desire has always obsessed the scientific imagination. Human study of eternity knows no bounds.

Therefore it is not surprising that some less humble spirits, motivated by the desire to unveil the secrets of the future, should have cultivated this zeal to such a meaningless positivistic extent.

2. Nevertheless, the long history of abuses does not invalidate the intrinsic merit of a number of well-founded, independent attempts to analyze the systemic evolution of social groups.

Scholars could only be fascinated by social developments, and the nature of their occurrence in time in particular.

Many great scientists have attempted to shed light on this area.

One outstanding example is Arnold Toynbee whose renowned work on the stages of history is a veritable landmark of human interpretative genius.
Nevertheless, the most abundant and significant examples are to be found in the area of political economics, especially with regard to the numerous paths to economic development.

Kondratieff became famous for his economic cycles and for the bold forecasts based on them.

At another level, Karl Marx set out to prove - with great ideological effectiveness, as his thought inspired the day-to-day running of the world's so-called Marxist regimes for decades - that economic systems

evolved inexorably from feudalism to bourgeois capitalism, and then to socialism, and then - triumphantly - to communism.

N.S.B. Gras formulated his theory on the three stages of the history of capitalism, from a completely different social perspective.

Curiously, K. Bucher - in his famous essays - focused his conceptual efforts on domestic economic development.

Suffice it to say that examples abound in the special domain of social analysis and systemic thought on which this essay rests.

3. We must, however, add one more reference to this illustrative list of works by modern historians which have caused heated debate among scholars, academics, researchers and practitioners.

This is Walt W. Rostow's *The Stages of Economic Growth*, published in 1960 when it was hailed as one of the major studies on economic development in the twentieth century.

In this author's sweeping vision, all economies go through 5 successive stages in their advance toward modernity, namely:

traditional society
the creation of pre-conditions for take-off
take-off
maturity
mass consumption.

Rostow, in his comprehensive interpretation of economic history, went so far as to attempt to explain such complex phenomena as colonial wars and regional conflicts, and to define basic criteria for classifying the economic growth cycles of the world's continents and great nations.

Even though Rostow's theories do not feature any more in textbooks on economic development, his scientific achievement played a crucial role in the 60's and 70's in the heated debates on the economics of underdevelopment, and poverty in the world and its cyclical patterns.

4. Much more recently, management as an art and an intellectual exercise has invaded contemporary micro-economics and has become a very popular subject of study and research in universities. The general use of management terms in every field of human activity today constitutes a fruitful field of study.

The business world's need to gain insights into appropriate strategic options and to formulate the best competitive policies led to the study of the life cycles of products and services.

In this review of evolutionary theories, the undying fascination with the way collective behaviour is affected by the mysterious variable of *time* is again evident.

Management studies generally cover the following 4 stages:

the creation or inception of development
growth or take-off
maturity
decline.

Without going into superfluous details, we should like to point out that - as in Toynbee's stages of history - products or services on the market are governed by the same vital logic as living things, which go into a

stage of decline, of a terminal nature, which normally leads to death after a period of rapid or gradual deterioration.

According to the modern theory of strategic management, education systems should similarly be studied over time in an endeavour to understand the intrinsic logic of their evolutionary dynamics.

As an enormous and unwieldy social subsystem, the education system of a given country is regulated by development rituals into which insights can be gained by conducting either an empirical and transnational observation of various coeval realities or a longitudinal study of the stages of evolution of a given system over a period of time. Both lead to generically similar conclusions.

5. In setting out to elucidate such complex and intricate issues, we do not aim to provide a complete interpretation of the history of education.

Nor will we attempt to formulate consummate laws of socio-educational development, since these would be unlikely to stand up to the critical exegesis of a demonstrably multi-facetted phenomenon.

We do not intend either to advance an overall explanatory model of the past from which standard - setting lessons might be learnt for the future. The scope of any single model, which is necessarily an oversimplification of reality, to make predictions is stymied by the extraordinary acceleration of modern history and the often disconcerting turn of events.

Our objective is merely to draw attention to common aspects which we have observed in the development of education systems, and, especially, to develop several analytical algorithms which may cast light on *the turning points* or *critical moments* in the life of these systems.

The conceptual framework that we are proposing is open-ended and essentially provisional in nature, as static concepts and immutable dogmas - supposedly designed to withstand the inexorable passage of time - cannot be applied to education.

6. This study of the temporal characteristics of the life of education systems does not assume that there is any isomorphic relation between education and the economy.

Indeed, it would be easy to succumb to the temptation to draw simplistic comparisons between educational and economic cycles for the reasons given earlier and as literature on the latter abounds.

There are theoreticians who do propound the existence of such isomorphic relations. The truth is that it is very tempting, when studying subsystems of the same social complex, to look for parallel and interlinking stages.

Obviously, the idea that economic progress and the requirements or conditions that govern the development of national educational systems are interconnected provides much food for thought.

We shall not, however, dwell on these fascinating themes which have yielded a plethora of blanket remedial theories on the most appropriate public educational policy for each specific stage of economic development.

This essay, rather, is concerned with the dynamics of education systems considered independently and studied individually, and does not relate them to other social subsystems.

7. The foregoing does not invalidate recognition of what are considered to be obvious links between a society's economic development and its educational attainment.

Many concepts have been formulated and much empirical research conducted in this field during the last 40 years.

Nobel prize-winners T. Schulz and G. Becker have also made outstanding contributions to the formulation of theories on human capital and the economic value of education. They are to be credited with the creation of many current notions of human investment through education and training; a subsequent development was the quantification of experience accumulated throughout active life, as defined in J. Mincer's well-known formula, expressed in a quadratic equation of earnings as a function of this variable (and linear as a function of the number of years of education).

The theory of human capital was refined over the years and detailed studies on the contribution of education to economic growth increased the volume and consistency of doctrine on the subject.

E. Denison explained the influence of the *residual factor* in national accountancy reviews on economic growth over a number of years. Tinbergen, in his famous equations, related the stock of diploma-holders by educational level to national product *per capita*.

More recently, in the 1980's, N. Hicks has used complex econometric calculations to demonstrate that a national investment made at a given date in human resources - measured by life expectancy at birth and literacy rates - can produce economic wealth over long periods of time; *mutatis mutandis*, societies that have attained the highest educational levels have the greatest potential for economic and social development. The same conclusion was reached by D. Wheeler, in studies based on simultaneous equations.

However, the most outstanding attempt to combine educational and economic variables - with clear policy implications - was the well-known but controversial indicator devised by Harbison and Myers in the 1960's (which was then the subject of heated debate) and expressed in the formula 1S+5T, in which S and T represented enrolment rates at the secondary and tertiary levels, respectively. Harbison and Myers used this indicator to divide countries into four main groups and reach conclusions as regards the most appropriate educational policies for securing sustained economic development.

In the present decade, the United Nations Development Programme (UNDP) devised a Human Development Index (HDI) calculated for each country on the basis of a formula that combines measurable human resources and living standards; the Index is published in the Human Development Report, issued yearly for the last 4 years, and gives a specific rating for each Member State of the United Nations.

There is obviously much literature on the isomorphic similarity between education and economy, a most topical subject which we shall not study in this paper.

The Stages of Educational Development

8. This analysis covers a relatively short period of time.

Ironically, we are starting, where Rostow left off: in the fifties and sixties, when mass economies began to emerge, immediately after World War II.

We specifically did not wish to devise a code for interpreting centuries of human history - an over-ambitious goal pursued in other social analyses. This essay therefore covers only the last 40 years which have been characterized by rapid change and the most fascinating acceleration in the history of humanity.

During those four decades, education systems were forced, by ever-changing paradigms, to keep pace with the surrounding world, shaking off their proverbial inertia, opening up to the contradictory forces of surrounding societies and breaking out of their ivory towers in order to become more interactive.

The synoptic table below attempts to give an overall view of the main stages of development of education systems during this period of intense reform.

Obviously, the four stages defined in the table are analytical abstractions and do not occur neatly as presented; rather, two or more stages always overlap symbiotically, creating hybrid situations which must be carefully studied case by case.

As education systems are never abstract entities, it is also clear that as they all have different historical circumstances, there may be evolutionary discontinuities in relation to the chain pattern presented here.

Nevertheless, much can be learnt from the systematic review of the rapid development of education systems over the last 40 years about common trends and signs of institutional vitality.

THE DEVELOPMENT STAGES OF EDUCATION SYSTEMS

STAGES	*PRODUCTION-ORIENTED*	*CONSUMPTION-ORIENTED*	*CLIENT-ORIENTED*	*INNOVATION-ORIENTED*
DRIVING FORCE	Sustained economic expansion Formation of human capital Demand for qualifications Training monopolies	Social demand Welfare state Economic growth Mass education	School accountability Public deficit reduction School-business partnership Client satisfaction	Institutional intelligence Future-oriented management of change Global learning strategies Transnational Competition
MAIN FEATURES	Teaching factory Assembly line Standardization Uniform regulations Bureaucratic power Teacher-borne production Exponential expenditure National budgets Teacher-centric pedagogies Supply strategies Student assessment	School democratization Participation (parents, pupils) National standards Deconcentration Technocratic power Mass-media technologies Public investment Global financing Learner-centric pedagogies Demand strategies Formative evaluation	Diseconomies of scale Co-responsibility Customization Decentralization Shared power Individual itineraries User charges Educational vouchers Interactive teaching Educational marketing Evaluation of results	Negotiation vs. regulation Project work Grassroots networking Ongoing institutional re-design Creative power Flat management styles Programme financing Marginal funding Variable pedagogic geometries Strategic spin-offs Performance appraisal
DOMINANT ROLE	Teachers Teachers' unions Central planning	Students Students' associations Peripheral planning	Parents/Employers Clients associations Local planning	Educational institution/Autonomy Clusters of educational centres Anticipation and tactical moves

Grasping the meaning of the vital energies of education systems is no linear or simple matter. It requires appropriate research instruments and acute sensitivity for identifying the driving forces behind the development of these unwieldy social and human subsystems.

It is significant that each stage of the educational cycle which we have attempted to outline contains certain institutional chromosomes, indicative of an evolutionary continuum built on the achievements of earlier stages.

These stages - like history - are characterized by continuous change, except for those specific moments when societies are disrupted by sudden breaks, revolutionary shocks that are eventually absorbed by the passing of time.

9. In our table, we have shown that education systems mature in four major stages defined in terms of their main concerns and objectives.

We have therefore named the stages or generations to reflect their predominant thrust:

Production-oriented
Consumption-oriented
Client-oriented
Innovation-oriented

We have attempted to sum up the most salient attributes of each generation, with regard to their respective **driving forces** and **main features**. Both are formulated in a systematically similar manner so that each row would provide a contrasted view by highlighting, especially between contiguous stages, distinctive features rather than common points which would be thrown into relief in a study of the main historical trends in an evolutionary continuum.

The conceptual aspects that must be highlighted are the changes and turning points.

The last row in the table refers to what might be termed **dominant role** and highlights the most productive exogenous and endogenous factors in the dynamics of change and in relation to the strategic position adopted by the Administration.

This, then, is the rationale underlying our necessarily brief presentation, aimed at providing a systematic picture of educational macrosystems which have developed in an open-ended essentially rather than circular pattern.

Production-oriented education

10. The **production-oriented** stage corresponds to the period of economic boom after World War II in the more developed countries of Europe and North America. Other continents and economies also went through that stage several years later.

Supply soared as production reached unprecedented levels in the industrialized countries. Economic growth was fuelled by the euphoria of investments for reconstruction, and seemed boundless, set to grow forever, without ever being constrained or depleting material resources.

It is obvious that in a situation of great optimism boosted by economic growth, the education system would be similarly affected. Supply-side economic growth was held up as the only salvation,

especially as economists soon realized that the traditional factors of production (agriculture, labour and physical-financial capital) alone could not ensure world economic growth.

This first stage which we have identified, then, represents a serious break with decades (if not centuries) of education marked by the elitism of the cultivated sectors of the population and the segregation of the influential minorities of each community.

Awareness that the *labour* factor per se was not a homogeneous variable and that economies would increasingly tend to diversify the work force along qualitatively differentiated and markedly heterogeneous lines into increasingly complex occupational structures, led to a new *ethos* in societies' approach to education.

For the first time, public education systems were faced with the imperatives of figures and amounts in a context in which the economy had an enormous *pull* on school-leavers and graduates, who were considered to be scarce resources in the development process.

11. The growth of heavy industry, characteristic of emergent economies, led to a parallel concept of educational industry breaking all the previous moulds of traditional, elitist schooling.

Top priority was given to the *formation of human capital*, to the point that an attempt had to be made to account for economic performance in various countries by measuring their respective stocks of human capital.

This obsession with production meant that education systems, and especially vocational training systems, had to be organized to supply large numbers of qualified workers who were quickly snatched up in an economic context of constant job creation and no structural unemployment.

The rigidity of this highly stratified labour market resulted in a narrow interface between the occupational structure and the educational structure of the active population. In other words, each educational field lead clearly to a specific range of jobs with low or insignificant *substitution* ratios.

By the same token, Ministries of Education grew to gigantic proportions, rapidly becoming imperturbable managers of huge educational monopolies, wielding power on three fronts: as direct administrators of huge State-owned formal education establishments; as regulators and supervisors of all educational bodies, regardless of ownership; and, as the only bodies with vested authority to award school certificates - and, consequently, to supply the labour market with suitably qualified workers for a given professional activity.

The government agencies concerned rapidly developed into formidable administrative machines of State, and strongholds of political power.

12. One of the main characteristics of production-oriented education systems was organization along the lines of a manufacturing plant.

Schools were equated to huge teaching factories and essentially operated like *assembly lines* in which the raw material increased in value at each successive stage.

Different combinations of *educational inputs, i.e* the various subjects (Mother Tongue, Mathematics, Natural Sciences, Human and Social Sciences, Arts, Vocational Training, Civic Education, Foreign Languages, etc.), produced a wide range of *educational outputs* which were modelled and adjusted to meet the requirements of the economic system.

This clear definition of the desired profiles of school-leavers made it easy to achieve optimum production by fine-tuning the appropriate assembly lines and by making the requisite productive combinations.

Standardization was the rule and within limits each educational centre had to be programmed to execute the same educational strategy at the same time and in the same situations. The pupils, in spite of being individually distinct, were taught in a nationally uniform manner and "homogenized" on various lines of production .

In centralized, authoritarian political systems, this standardization often reached heights of refinement, and educational agents - the teachers - were considered to be servile robots programmed to comply with standards issued by the central planners of the entire education system.

The education system was like a clockwork precision tool whose reliability and credibility rested on the repetitive performance of operations.

13. In this stage of the educational cycle, bureaucracies became more and more powerful, while peripheral institutions were merely operational links in a long chain, receiving all orders from the centre.

Bureaucratic power was wielded in the form of uniform regulations issued from the top of the educational pyramid.

In a gigantic system dominated by production, the bureaucratic mentality stretched its hyperregulatory tentacles to every operational nook and cranny of the system. The smallest detail had to be provided for and rationally regulated; *a contrario senso*, the slightest sign of institutional liberty or hint of independent behaviour posed a threat to the system's operational uniformity and, consequently, constituted intolerable rebelliousness.

The main factor of educational production was the teachers.

Teachers, under the orders of zealous local senior civil servants, complied with the numerous administrative, technical and pedagogic regulations issued to control educational systems. They were trained to produce and reproduce laboratory-designed teaching models, according to teaching strategies set forth in great detail in manuals and instructions produced by curriculum syllabus designers in national ministries.

As production was the predominant concern during that period, it is no surprise that teaching was far more concerned with educational objectives than with learning itself.

As long as the teachers complied with syllabi and established standards and the schools organized their physical resources as instructed by the centre, pupils would complete their courses and meet the professional profiles required by the economy.

14. With such ideas in vogue, enrolment soared as education systems expanded.

As production strategies are self-replicating, it was inevitable that this expansion would lead to a vast increase in the numbers of students, especially in a dynamic demographic context reflecting the prevailing mood of optimism and confidence in the future.

Supply-side strategies merely required schools to be set up wherever large numbers of children were to be found in order to train the specific types of technicians and managers needed for economic growth.

Once the system was set in motion, it would follow a "balistically" predictable and unstoppable course.

Control variables were few in number and would fall into the linear scheme of things.

There was no awareness whatever under this entirely production-oriented system of the need for specific institutional evaluation or to monitor operating conditions.

In practice, only the knowledge acquired by the pupils was assessed as they, taken individually, were only "contingency" factor in a virtually infallible system.

It was only logical, then, that ***docimology*** emerged as a dominant science designed to provide individual quality control.

Educational success was the natural consequence of a strategy to harmonize educational and economic systems in an expansionary environment. Failure was the exception that confirmed the rule and, without ever invalidating the model, merely indicative of one individual's inability to achieve what each pupil was expected to achieve in a perfectly designed system.

15. It is obvious that teachers and their unions and associations played a leading role in such a situation.

On the one hand, teachers, backed by the entire education apparatus, had to carry out bureaucratic orders meekly so that the education megasystem could operate smoothly.

On the other hand, as its educational action rested on the leading role of teachers, they become a sort of intellectual proletariat within the system, pugnacious and united, likely to be organized at several levels to bring intense pressure to bear in pressing their claims.

The activism of teacher's unions was a known force to be reckoned with.

It was therefore perfectly logical that a system obsessed by production should be influenced primarily by the *producers*, that is, by the educational agents (teachers).

Consequently, the other social players had very little scope for action, and were frequently relegated to a secondary position.

The Ministry was in the end administered by teachers or their allies, and became hamstrung by a power play in which the teachers' interests always triumphed.

This distribution of leading roles lent itself well to central planning, which was characteristic of production-oriented organizations. The education system, much like a factory in which the entire mass-production process was controlled by a single nerve centre, was dependent on planning units, themselves dependent on a central unit that devised strategies and tactics for the entire system.

The pace, direction, significance and functioning of the productive machinery were all decided and planned in their entirety by that central unit which ensured the unity of the system by generally adapting its quantitative policies to the solidarity shown by each of its component parts.

Consumption-oriented Education

16. The following stage, **consumption-oriented education**, dominated too by a mass paradigm, was subordinated more to ***consumer pressure*** than to the ***pull*** of the economic apparatus.

In this stage, education stopped being a macro-economic parameter and became an individual or family consumer good subject to the demands of a society that wished to enjoy ever higher levels of well-being, boosted by the gradual distribution of the fruits of economic development.

The consumption of educational goods was, therefore, a consequence of the trickle-down effect of the democratic redistribution of the material benefits of economic growth.

The education system was now influenced primarily by ***social demand***, in other words, it was geared to provide numerically and qualitatively adequate responses to the expectations of the majority, especially to the upwardly-mobile middle classes who came into being as a natural result of accelerated and widespread economic progress.

Mass consumption gave rise to more and more educational supermarkets and a school map showing large clusters of educational centres.

The quantitative explosion of the previous stage was now accentuated, as a result of urgent social demands and popular belief that education was the best insurance policy for the future.

This meant that people decided to further their education or to purchase an article or service on the commercial market for the same reasons. Perhaps the only difference was that education represented future rather than immediate consumption or, to put it in economic language, an investment in human capital in the present which could create a flow of benefits later on.

17. The concept of education as a social consumer good entailed collective responses to societal organization which led up to the creation of so-called Welfare State.

The Welfare State was based on the concept of an Utopia organized to meet all these aspirations gradually, through the provision of State-owned services free of charge.

It was the institutional expression of social democracy which believed in the unlimited capacity of the public sector to meet the ever growing demand for education, health care, social security, housing, etc.

The Welfare State was therefore based on an inevitably egalitarian philosophy which, taken to absurd extremes, rejected the diversification of secondary education and demanded unified educational structures asserting that education process should not be differentiated in such a way as to create unfair opportunities for advancement.

The rise in the disposable income of households was ultimately reflected in their consumption patterns in which education was given increasing importance. Technological progress was also largely responsible for making large numbers of manual labourers redundant through mechanization and

automation. This was reflected in lower educational costs and growing belief that childhood and youth should be spent in school preparing for active adult life.

The concept of mass education was strengthened by the fact that schools were increasingly seen as *hypermarkets* where consumers could shop around to meet their consumer needs in education and training.

The education system was equated to huge chain of supermarkets.

18. The first and perhaps most important consequence of this interplay of forces was the idea that education led to social democracy and, *mutatis mutandis*, that democracy could not be fully achieved unless education was available for all.

This democratic pre-condition had important functional implications: namely, that the system had to provide basic education for all, and personal merit had to be the only basis for student acceptance and advancement.

The democratic spirit which upheld the laws of individual demand could conflict with educational planning that was strictly designed to meet the needs of the machinery of production. Two schools of educational planning inevitably came into conflict when a system guided by forecasts on developments in the economy and the labour market came up against the full range of an individual's or family's educational aspirations.

The development of an information system to make labour markets more transparent so as to facilitate informed employment choices was a significant contemporary issue..

Educational management methods were adapted to move away from a situation in which the system was managed by *experts*, in other words, by education professionals, to one in which users such as parents (primary and secondary education) and students (at higher levels) participated and account was taken of their ideas.

The education system was generally funded as a whole. Government budgets reflected the social priority given to education, to the extent that they accounted for the lion's share of the funds allocated for education.

Governments allocated funding packages in response to the growing demand for education; however, the highest budget provisions were not for fixed assets in the education sector, but for the operating costs of a burgeoning system which had a very high salary and wage bill. When those costs reached certain ceilings - 6.5% or 7% of GDP - appropriate courses of action were discussed and the limits of the Welfare State highlighted.

19. The integrated administration of a consumption-oriented system accentuated the characteristics of the stage dominated by production.

Local creativity was crushed underfoot by the supremacy of national standards issued to meet the demands of the hordes of consumers anxious to enter the system.

For reasons of efficiency, however, it was eventually realized that overcongestion could intrinsically impair the ability of the management model to meet spiralling consumer demands.

Some Administrative services were generally moved to the periphery at this stage in order to reduce congestion. However, this administrative reorganization, technically known as *deconcentration*, did not involve any sharing of power - which was still jealously guarded by the centre.

Deconcentration was generally considered to conflict with an effective policy for the decentralization of power. It could create the illusion that the Administration was drawing closer to the consumers without in any way changing the reins of control of the system or altering the balance of democratic governance; in fact, deconcentration was generally, a step towards effective centralization, as further consolidation of power at the top of the pyramid was matched by a more intelligent distribution of executive authority on the ground.

The periphery, whether a regional office or an educational centre (school, training centre, university, special education centre) did not exercise authority in its own right. Quite the contrary, authority was merely delegated to it by the central unit which, instead of exercising it directly, preferred to send it down the hierarchical chain, secure in the knowledge that it could be changed, repealed or reviewed at any time.

Deconcentration implied vesting peripheral authority in a locally-established "State" official appointed at the entire discretion of the central authorities and kept in position by them on trust.

There was no form of election under which the official could be held accountable to the local community served, the only *constituent* being the central Administration, and not the local community.

20. In a system with mass education characteristics, administrative deconcentration could be the solution for technocrats who wish to act on criticisms from consumers, who demand higher and higher levels of attainment. It constitutes a perfect immediate response in supplanting an autocratically inspired Jacobinic approach.

It could also be an apparent panacea for increasingly unmanageable educational mechanisms run on a national basis which cannot cater to the complexities of a mega-system that is highly exposed to regional and local cultural differences.

Some technocratic authorities, unshielded by bureaucratic authoritarianism, could acknowledge the adverse effect of the depersonalization and anonymity of relations in a system indefeasibly geared to broad quantitative considerations.

Clear perception on their part of shifts in consumer opinion could lead to strategies devised to break up the *bureaucratic monster* which, like an imperturbable dinosaur, crushes any attempt to adopt a personalist educational approach.

The ***learner-centric pedagogies*** which became widespread unlike teacher-centric pedagogies which depended on demand, addressed the disparity of educational communities but was dominated by the paradigm of consumption.

The use of new educational technologies, strongly recommended by some international organizations in the sixties and seventies reinforced rather than weakened that paradigm.

The introduction of communication media i.e., radio, television, into the classroom as audio and visual supports did nothing to solve the basic problem. Undoubtedly, it improved several major

aspects of educational performance, specifically when there were shortages of traditional resources; but it fell far short of the *educational revolution* that some had predicted.

21. As educational consumerism spread to sparsely populated areas, poorly served by an educational network that was concentrated in urban and suburban areas, some means had to be found to meet demand in these regions.

In a consumption-oriented system, this demand could not be ignored, not even in the most inaccessible areas, in view of the risk of undermining the principle of education for all without geographical restrictions.

In order to offset geographical and social disadvantages, the system could only adopt an approach known as ***positive discrimination***, compensating disadvantaged students by providing them with preferential educational conditions.

This was done through distance education by radio and television in areas where there were no teachers. Such programmes were devised and tested in contexts as disparate as those prevailing in Australia, Côte d'Ivoire, Italy, Portugal, Turkey and Brazil.

It soon became evident that, in spite of the relative effectiveness of certain communication technologies, they could not quite replace the human element in the teaching environment. In fact, technology is only an expedient that lacks the anthropological dimension inherent in the educational act.

It is not surprising that studies were subsequently conducted on *mixed* teaching-learning alternatives featuring multi-media strategies devised to strike an optimal balance between technological elements and the indispensable human component.

22. Lastly, testing in a system geared to the interests of its users cannot be confined to summative evaluation of the knowledge of students who wish to continue or complete their studies.

As the direct users of a system designed to satisfy their immediate desires for social mobility, students and their families require other types of evaluation, throughout the educational process.

This ongoing evaluation, while not affecting the summative evaluation makes it possible to get a picture of the quality and pace of learning and, consequently, to prescribe remedial measures scaled according to needs. This is called *formative evaluation*.

Formative evaluation is practised by educational systems that are conscious of their users needs and concerned with their progress.

Formative evaluation does not focus only on the acquisition of knowledge or formal attainment of curricular objectives. It takes into account the way in which education is being assimilated - one might say *consumed* - by the mass of consumers.

From this perspective, the student is not merely raw material that is being processed in a teaching factory, but also a human being with personal, cultural and social needs that must be met interactively through formal educational activities.

The strategies used took account of concerns such as *educational social action* and *extra curricular activities* which complement and transform the curriculum into a full-fledged educational project geared to meet its users' needs.

The list of variables taken into account in formative evaluation transcends the strict and restricted learning relationship within the classroom and this extends to all the complex factors that determine the students' performance.

23. The key factor in this stage was the **students** body.

Students and their representative unions, the latter in the secondary and tertiary levels, were the raison d'être of educational centres and determine their specific configurations.

Middle-class neighbourhoods tend to generate middle-class schools, both in values and institutional behaviour patterns. Schools in rural areas eventually reflect the driving sentiments and cultures of those areas. Educational institutions can rarely avoid actively reflecting consumer values. Thus the students' desires or those of their legal representatives - families, at the level of basic education, and unions and associations, at higher levels - constituted the single most important element that ultimately determined system's institutional configuration.

In reality, where teacher unions were strong, there was inevitable confrontation between teachers' associations, on the one hand, and parents or students, on the other, producing tensions that could prove beneficial to the growth and maturity in the education system.

In that context, teachers often tended to make less radical claims and less importance was ascribed to their social representation as an intellectual profession.

24. As we explained earlier, the administration of the system could be compelled to implement intelligent deconcentration strategies.

Highly centralized planning could be followed by peripheral planning in which regionally deconcentrated units perform increasingly important functions in the design and rationalization of the system.

In this form of *peripheral* planning local planners at regional level or even in educational centres, must be trained so that they would have the knowledge and methodological tools that are indispensable for the macro-orientation of each subsystem.

The most important feature of peripheral planning is school mapping. This involved the rational and balanced distribution of schools, decisions regarding the exact type of establishments to be set up, the management of enrolments and proper use of available educational resources in the respective catchment areas.

Peripheral planning is, as its name suggests, always subject to uniform central standards that are invariably issued by the central administrative unit in charge of global planning.

It can also be linked to the peripheral planning in other administrative areas - health care, agriculture, rural development, land-use planning, industry, employment, youth, public works, social security - or even regulated by local co-ordination guidelines established by deconcentrated global planning bodies.

Educational planning is thus subordinated to vertical decision-making in the educational administrative hierarchy, in spite of pressure for horizontal consultation and co-ordination at regional or local levels where there are certain constraints due to land-use planning and the location of social and productive facilities.

At this stage, still strongly affected by mass consumption, educational planning in the periphery was a natural consequence of the administration of the system being improved to respond in a more sophisticated manner.

Client-oriented education

25. The educational cycle then enters a new stage dominated by **client orientation**, moving away from the mass strategies that had been the main feature of earlier stages.

Here, the key is neither production nor consumption, nor even the ill-defined concept of user. Rather, the system is now concerned with quality, as a result of the deepening relationship between the school and its clients, in the surrounding community.

In this context, society is not merely seeking to enjoy the formal right to education, nor yearning for an education system that covers the entire national territory or offers a wide range of courses and educational options. At this stage, education is expected to be more than just the technocratic or mechanical provision of instruction.

The client, as an individual, sees the school as a powerful ally in the search for all-round education as the pre-requisite for becoming a participating and understanding citizen.

This means that there is a desire to reintroduce a human and personalist element into the provision of education, which would make the learning process an enjoyable experience, constantly monitored by the entire community, which now plays an active educational role.

26. The main driving forces at this stage are educational ***individualization*** and the importance ascribed to the human face behind the number or educational statistic.

The school is one of the most significant social institutions.

It is also the focal point of the individual hopes and dreams of the entire nation, a community with shared collective goals and high aspirations.

This is why every educational system must be held accountable for its actions to the society it serves.

Schools and educational officials must be held accountable for what they do, how they do it, and how they reach or fall short of the objectives set for them.

This accountability is not confined to merely publishing an annual report of activities or holding meetings periodically to take stock of academic achievements. .

Rather, it means providing a wide range of answers to the major educational questions constantly raised by the client community.

These questions relate to the nature of schools, the type of citizens they should strive to produce and the resources and methods to be used; efficient use of government funds earmarked for education,

ways and means of maximizing the human potential of the community and reducing the margin of wastage of human efforts; the vision of man and humanity and the philosophy underlying great universal values such as liberty, justice, solidarity and peace.

27. Education systems usually encounter major financial difficulties when they enter this phase of their long evolutionary cycle.

This is the stage in which schools are under the greatest budgetary pressure, due to the extremely high cost of free public education to the end of secondary schooling, the general economic difficulties that lead to the demise of the Welfare State and the inevitable formulation of policies to cut the public deficit.

This often leads to a paradoxical situation with no easy way out.

On the one hand, there is unrelenting pressure from the clients who demand ever higher educational attainment and quality teaching, unlike the previous stages when quantitative aspects were the overriding concern. On the other hand, tight restrictions on financial inputs and physical resources lead to a gradual drop in the system's unit costs at various levels, especially primary and secondary levels.

In this situation, any satisfaction at the rational use of public funds may be cancelled out by great dissatisfaction, even frustration, at the fall in quality thresholds as a result of the introduction of rash economy measures.

A frequent solution to this problem is to diversify funding sources and seek alternative resources in hitherto unexplored areas, for example, the various forms of ***School-Business partnership*** which are now so popular, with training costs being shared more fairly as businesses will benefit directly.

28. In reality, ***partnership*** between educational institutions and units of economic production is not only based on the financial advantage of sharing the costs of the education system which traditional public funding sources cannot cover any more.

Closer co-operation between these potential allies - school and business - rests on the notion that firms are very special clients of the education system.

It seems only logical then that the two should harmonize their policies. This harmonization should go well beyond the narrow sphere of financial co-operation and be carried forward into curriculum design, the definition of course content, the establishment of evaluation standards and the monitoring of graduates by means of longitudinal studies throughout their professional career to obtain important feedback data on the education system.

There is much more co-operation between schools and businesses at higher levels of qualification and knowledge. Businesses can and must be invited to participate, much more actively in this stage than in the previous ones, in experimental research and development, in the development of learning and alternate educational models, and even in the up-dating of the managerial methods and techniques of educational institutions.

This partnership is therefore virtually limitless, and constitutes a promising area for innovation and improvement on both sides.

The general trend is for the school to adapt its curricula and methods increasingly to the requirements of the business world, while companies are increasingly eager to take part in the basic education of the young and, above all, in continuing adult education.

29. As the system reaches the stage that emphasizes individual response to clients' needs, quantity becomes a disadvantage - the dimension must now be human and manageable.

To some extent, the economies of scale of the previous stages lose importance, since they are no longer strategically advantageous and are transformed into virtual diseconomies of scale. This stage is one of institutional development characterized by sudden realization that educational activities conducted on a smaller scale are all the more humane and easier to manage. This essentially means that "small is beautiful" also applies to the operation of educational centres.

The result is that education systems become less rigid than in true national pyramids in which policy is inexorably dictated from the top to the base. Each institution on the ground can now conduct its own policy, so that systems are truly tailored to suit their clients and their specific ideas about how education should be organized.

The dominant administrative feature is now effective ***decentralization*** of the educational apparatus; each community may participate in a number of ways, defining specific educational projects and democratically selecting the main local players.

Decentralization does not necessarily have to lead to anarchy or lack of unity in the functioning of the national education system.

Existing general standards remain essentially intact, even in cultural contexts that have traditionally favoured decentralization.

Decentralization essentially means that power is specifically shared by the State and civil society on the understanding that education is not the exclusive preserve of one or the other. The usual role of the liberal State as the exclusive or near-exclusive administrator of education is therefore superseded and responsibility is generally shared by the various groups within the community.

The Welfare State is gradually replaced by a new order whose philosophy demands absolute social freedom, in order to achieve educational, cultural and institutional freedom.

30. The teaching methods used in state-run schools gradually shift to ***interactive teaching,*** based on the assumption that the school should be completely open to the educational potential of its surroundings.

Curricula are therefore no longer based exclusively on the traditional underpinnings of scientific knowledge and grid of academic disciplines, but, rather, permits some relief through interdisciplinary and multidisciplinary projects. The school is now inherently interactive and obliged to allow the client to negotiate and have a say on the curriculum, instead of merely playing a passive role.

Such negotiations may even include the idea of individual curricula, which, if actually taken on board, would be the pride of both the school and its teachers.

By identifying the common needs of the clients and the generic patterns of course content, each community can organize its school activities in the most appropriate manner.

Each student is unique and deserves to be studied individually and given personal attention. Thus, the school as an institution is constantly looking for common points among individual educational aspirations and endeavouring to match them with the resources that community can muster to provide that education.

Socialization, which has long been the goal of educational activities, is really no more than this commonly shared desire for coherence within a given human community in the same educational catchment area.

31. The client is required to contribute financially to the client-oriented system.

This means that clients share educational costs, by agreeing to pay general expenses and costs in proportion to the quantity and quality of the services received. This *fee* is simply payment in the conventional sense of the word, tantamount to private financing of the system.

The client-oriented approach leads effectively to in-depth reform of the funding system. That reform rests on acknowledgement of the fact that in forming human capital, education generates both public and private benefits in terms of potential professional earnings and on the theory amply borne out by empirical evidence that private returns are considerably greater than social ones.

There are three basic reasons why a client-oriented system should be founded, at least partially, by fees:

a) the principle of sharing costs and active support for a system that reflects great increased collective responsibility;

b) the distribution of responsibility in proportion to the subsequent distribution of public and private benefits;

c) social justice which requires higher contributions from persons with high earnings while exempting those who cannot afford to contribute to the private funding of the system.

Fees can also be charged to the business sector; such outlays are justified in view of the potential returns to companies from a more highly qualified labour force.

In many economic and social environments, companies are the primary sources of funds, especially for vocational training, and initial or continuing adult education. Close partnerships at this level is generally conducive to the maturity of the institutions involved, and proves that a sound relationship has developed between the education system and the surrounding society.

32. Keen political awareness of the rights of the clients may, in certain contexts, bring about substantial alterations to the self-financing rules of the education system.

The emergence of more liberal ideas, based on the economic theories of the Chicago School, giving the client full choice and the right ultimately to decide on how funds should be allocated to institutions corresponds to this phase.

This marks a radical change in traditional funding policies. Instead of being directed to the productive centre, funds are allocated to the student or the student's family (the client), who therefore becomes responsible for making a choice free of domiciliary or any other type of constraint.

Under this system, families receive education vouchers of variable amount depending on the number of children of school age and each child's school level, which the educational institution chosen can convert to cash. The amounts are based on annual school expenditures per pupil, and are rigorously reviewed every year.

The most successful institutions on the educational cheque market are the ones that attract the most clients, and have the highest receipts. Institutions that fail to attract clients are penalized financially and must either improve their image or risk being squeezed out of the market.

This is therefore an open supply and demand market in which the client has the last word and thus influences the allocation of educational funds which are channelled to reflect that free choice.

33. In this client-dominated environment, education systems and their individual institutions have to apply ***educational marketing*** criteria and policies.

This marks a new era in the systemic conception of education.

In the traditional model of a monolithic public service organized in accordance with the rules of State administration and firmly bound in a straitjacket of impersonal and nondiscriminatory standardization, schools would never have been able to use marketing criteria. Now that they have to compete on the market for clients, schools are changing their behaviour considerably and are using market analyses in an attempt to rationalize their options and strategies.

Educational marketing means that each institution must make a serious effort to gain better insights into its clients' preferences; it must constantly look into the reasons behind their educational choices, try to understand the image it projects and preconceived ideas formed about it, and clearly define its position regarding the market sectors that it wishes to win over.

The marketing of public and parastatal institutions is still in its infancy, but it is indispensable for building organizational bridges between the providers of an essential service, namely, education and civil society which enjoys or sets great store by that service.

The evaluation of the system is now based on the desire for tangible results from the clients' perspective, rather than that of the producers of the system or its political administrators.

Results are measured in terms of the quality of the final product, which determines the school chosen preferentially by each family. This evaluation is constantly being performed by the clients, who establish their own rating of the competing schools or refer to ratings prepared by relatively independent bodies.

Consequently, the evaluation of results is a primary element in the complex relations between institutions and their clients and of prime importance in marketing strategies designed to meet each institution's objectives.

34. Parents and employers - that is, the families who decide which educational model they prefer and the companies which receive the graduates - are the main players in client-oriented systems.

Both groups, each in their own way, influence and bring constant pressure to bear on the system which they feel was designed to serve their needs.

The harmonization of interests within each of these groups through parents' and business associations can be highly effective in making this pressure public, and can make them an allied force to be reckoned with.

In a free society, legally constituted pressure groups and their representative associations enjoy freedom of expression. The clash of viewpoints and the social negociation that are constant features of democracy can therefore be beneficial and creative.

Democracy is, precisely, the art of administering spontaneous conflicts and of reconciling opposed points of view.

If the leading players at this stage of the development of education systems are to play a positively constructive role, schools must be run on democratic lines and, above all, be centres of democratic activity and education. Otherwise, the open clash of extreme positions which often occurs, for example, between parents and teachers, could have harmful effects on the educational process if it is not cushioned by democratic conviviality. School is a place for teaching and learning, a place where social forces meet, not a battleground.

School administration models must be carefully designed to allow the broadest and most unrestricted participation and the primacy of democratic rules, while avoiding the pitfalls of indecisiveness and corporatist rhetoric. The higher interests of the group, that is, the clients themselves, should always prevail over individual opinions or vested interests.

35. One irrefutable requirement for the consolidation of a client-oriented education system is that the administration should allow some "leeway" at the local level, for dealing with community problems, in particular to encourage clients to participate actively and responsibly.

One of these crucial areas is the ***local planning*** of the system under which broad decision-making powers would be vested in the parties directly involved, or in their respective associations.

The system should be highly decentralized to deal with matters such as finding the best site for a new school building, running the canteen, encouraging community involvement in the upkeep of school buildings and facilities, management of sports facilities so that they may be used by local groups, and even the priorities and sacrifices to be reflected in the institution's annual budget. It would therefore be very easy for it to adapt to future changes in the clients' situation and its own development requirements.

In good local planning, the central administration's numerous, usually wasteful, actions are phased out as the people directly involved can themselves propose and work out solutions by consensus.

Innovation-oriented Education

36. In fact, most education systems have not yet fully reached the client-oriented stage. Even in the industrialized or the so-called post-industrial countries, which have attained higher levels of social and institutional sophistication, the structure of existing education systems is usually a *hybrid* combining varying proportions of the three stages described earlier.

The concept presented here regarding the next stage therefore looks to the future and an attempt is made to sketch the main features of the system that is likely to emerge and gradually develop its own personality during the next few decades.

The **innovation-oriented** system is like a bridge into the future, a sort of foretaste which, while preserving the achievements of the past, looks forward to future new challenges in a spirit of confidence and creativity.

The difference between this and earlier stages is that the system and its component parts are not subordinated to the dictates of an endogenous or exogenous factor which then becomes predominant in a particular context. Instead of devising its rules and formulating its basic policy to accommodate those factors, the system develops a structure which enables it to respond to ongoing and bewildering changes.

Organization is no longer ***adaptive*** - responding to stimulae more or less as they occur - but ***anticipatory***, which allows it to manage change rather than simply being subordinated to it.

This type of education system is anything but routine. Rather, innovation is its main asset, a sustaining force for survival in this world of increasingly rapid change.

37. This system ascribes the utmost significance to ***institutional intelligence***.

Institutional intelligence is not merely the formation of human capital or managerial skills at all important levels.

It is quality which gives certain organizations their competitive edge. It covers a wide range of ***intangibles***: the human factor; the corporate culture; internal mobilization and concerted action; leadership skills; incentives for creativity at various operational levels; empathy and shared values; the ability to think strategically; and farsightedness.

Institutional intelligence is not born on its own, spontaneously. It is coaxed into existence, cultivated, the outcome of systematic training and the development of favourable attitudes.

The school is seen as part of a wider world of other forces and institutions which constantly interact with it, all influencing each other, which makes each moment and experience unique.

This is why the school must be seen in a global dimension of learning and training in which other powerful players such as the family, the mass media and many social groups are constantly forming opinions, desires and personalities.

Alliances and synergies are invaluable in global strategies. Just as no one can do everything all alone, no institution can singlehandedly lift up all the others, or carry out its specific project *in vitro*, in isolation from the rest of the world.

This creates healthy competition between formal and nonformal educational initiatives in society, with highly disparate and mutually influential forces interacting with each other.

However, competition is not restricted to alternative forms of education. It also occurs within the formal education system itself, which devises many alternatives in order to cater to its clients. Educational competition is basically competition of ideas and *educational software*, transcending all national frontiers and customs barriers, and, by definition, is very mobile.

This is why real competition among educational institutions is gradually taking on transnational proportions in which language, nationality and convictions are of no consequence.

Innovation-oriented education is a truly universal challenge.

38. Such a system would conceivably not be constrained by stringent juridical definitions, nor will it be characterized by immutability.

There is no room for theoretical models and bureaucratic algorithms in this scheme of things in which solutions are found through open negotiation rather than through rigid standard-setting.

Team work and projects now take the place of the mass education concept of earlier stages. An innovation-based system constantly maximizes the contributions of all its members and encourages organizational structures conducive to internal synergy.

Projects on which the community concentrates its educational efforts free from operational or disciplinary barriers run counter to traditional textbook wisdom, which may seem perfect on paper but has very little to do with real life. By the same token, group productivity, based on each member developing his or her potential freely and fully, lays emphasis on the individual which may be personally rewarding but may also prevent group priorities from being set.

Innovation is rarely the result of individualistic adventures. On the contrary, human interaction is the greatest source of inspiration for creative minds and for designing new projects.

39. Creative power within the organization is evinced primarily through the dynamics of ongoing ***institutional redesign.***

This means rejection of permanent hierarchical models formally based on authority imposed or predetermined from above.

Functional leadership may be retained, but style and methods will be constantly adapting to change. Appropriate institutional responses would be based on the nature of the issue or on a specific analysis of the problem to be solved.

Prescriptive rules on ideal decision-making levels and on theoretical models for the delegation of authority would be meaningless. Centralization, decentralization, deconcentration or the regionalization of authority can only be meaningfully discussed in the context of finding the most suitable model for each situation but not in abstraction.

It is also meaningless to think in terms of cause and effect in a situation that does not lend itself to simplistic interpretation based on a unilinear reductionist view of events. Instead, there is more ***networking and interaction*** at many levels.

The organizational structure will be all the more durable if based on local networking in which sharing and exchanging of classified information plays a major role.

There are many types of network: project networks, training networks, information networks, quality networks, specific solidarity networks, stimulation networks, professional reconversion networks, advisory networks, and management networks.

The networks have a great multiplier effect, since they are based on people and the pooling of their creative energies.

40. A system that is underpinned by innovation, and is the byword of creativity is incompatible with Taylorian organizational pyramids.

The vertical lines of command that were absolutely necessary in large-scale systems for preventing disorder and safeguarding unity formally based on uniform procedures cannot survive in this environment. It is at this stage that flat management methods come into their own.

Flat management implies the elimination of the numerous rungs of the ladder between the top and bottom of the pyramid. Decision-making is integrated into executive bodies within the rank and file to enhance their ability to effect change in the light of an on-going evaluation of system operations.

Modern management is not concerned with abstract structures but with individuals and specific human groups.

Teaching cannot now be "laboratory-designed" and must be geared to constant educational innovation. As education evolves from human relations, it obviously reflects the mystery of the infinite variety of human beings in contact and their inalienable freedom.

As teaching cannot be fully and positively determined beforehand, it would vary from one classroom or training context to the other. Learning difficulties in such a context could, in theory, always be overcome. In a such a system free of preconceived opinions and standards drawn up for teachers and normal pupils (the word itself is a statistical abstraction), remedial teaching is simply an appropriate educational alternative.

Evaluation is thus designed primarily to ascertain precise knowledge and the way in which the system and its component units perform.

What counts here is not so much results measured by sophisticated parameters, but relevant human information which can be used to devise operational guidelines for the system. The process itself is as important as the end product.

41. The size of the system and its various parts are under constant scrutiny. Growth in size and organizational complexity beyond certain ceilings is incompatible with innovation.

Institutional growth is unstoppable, however. Living things tend to grow and become increasingly complex.

The system must be flexible if there is to be a modicum of institutional innovation and if the encroaching paralysis of routine is to be effectively checked: this entails ***strategic spin-offs*** such as the formation of independent units whenever justified and as required for the development of the system.

Consequently, growth is not artificially contained; rather, it is tolerated up to a certain point, beyond which it is advisable to divide the main unit into subunits which then follow their own institutional course.

The spin-off may occur in a section in one of the levels being taught in the school, or one of its horizontal function, such as the management of student support services.

The spin-off should take whatever form would enable the institution to function efficiently in a given situation.

The redistribution of functions does not mean dilution of responsibility or alteration of the educational model, which must be avoided at all cost, if objectives are to be fully met.

Whenever a spin-off occurs, the system should draw on its internal creativity to strengthen its network structure and thus maintain the organizational coherence that is indispensable if the educational process is to be effective and efficient.

42. The implication of this qualitative leap into a future of uncertainties is that the innovation-oriented education system would bring out the full potential of the ***educational institution***.

This does not refer to the institution in the strictly formal sense, but to all the powerful forces of innovation within an educational organization which make it unique.

The most salient factor should not therefore be exacerbated activism by any of the socio-professional groups that take over the system. Such a unilateral vision has no place in a community that is motivated to take up the challenges of the future and is always looking forward to new developments.

As educational institutions reflect human realities and can be restructured on an ongoing basis and bear strategic spin-offs, it is obvious that they cannot succeed if they act alone. System dynamics would require educational centres that can best meet strategically formulated educational objectives to be associated with each other.

The ethos of the system is not imposed from above through long-winded regulations or high-flown executive diplomas.

Rather, it evolves from interaction within the rank and file, based on common interests and the mutual benefits of always responding in an innovative manner to their community's multifarious demands.

Foresight is of the essence because it is naive and an enormous waste of talent and time to give thought to a problem only after it has arisen.

As the operational globalization of education systems entails intense competition at every level, tactical flexibility is required in the formulation of medium-term strategies and for taking immediate action.

In aviation, the most exciting flight cannot be predicted by mechanical modelling based on previous flight paths and scientific analysis of factors that could affect the prearranged course. In a truly creative flight, the pilot is constantly making tactical moves with resultant departures from the charted course and the discovery of new horizons.

A truly innovative education system should therefore never be tied down by predetermined forecasts and directives.

Rather, it must be free like the men and women who are free, free to serve!

References

Bauer, P.T. Dissent on Development. London. Weidenfeld and Nicolson, 1971.

Becker, G.S. Human Capital. National Bureau of Economic Research. Columbia University Press, 1964.

Denison, E. Le Facteur Residuel et le Progrès Economique. Paris. OCDE, 1964.

Harbison, F. and Myers, C.A. Education, Manpower and Economic Growth. New York. McGraw-Hill Book Company, 1964.

Hicks, N. Economic Growth and Human Resources. World Bank Staff Working Paper No. 408. The World Bank, 1980.

Porter, M.E. The Competitive Advantage of Nations. New York. The Free Press, 1990.

Schultz, T.W. The Economic Value of Education. Columbia University Press, 1963.

Tinbergen, J. and Bos, H.C. A Planning Model for the Educational Requirements of Economic Development. Paris. OECD, 1964.

Toynbee, A. A Study of History. New York, Oxford University Press, 1972.

UNDP. Human Development Report, 1993. New York. Oxford University Press, 1993.

Wheeler, D. Human Resource Development and Economic Growth in Developing Countries: a simultaneous model. World Bank Staff Working Paper No. 407. The World Bank, 1980.